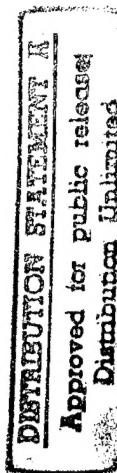


CHINA'S IMPORT OF FOREIGN TECHNOLOGY,
A CHRONOLOGY:

1 JANUARY - 30 JUNE 1986

June 30, 1986



Federal Research Division
Library of Congress
Washington, DC 20540-5220
Tel: (202) 707-9905
Fax: (202) 707-9920

Author: Donald R. DeGlopper

19951208 091

REF ID: A6727
UNSPECIFIED 1

REPORT DOCUMENTATION PAGE

*Form Approved
OMB No. 0704-0188*

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave Blank)	2. REPORT DATE <i>1 JAN - 30 JUNE 1986</i>	3. REPORT TYPE AND DATES COVERED <i>Final</i>
4. TITLE AND SUBTITLE <i>China's Import of Foreign Technology, Survey, and Chronology</i>		5. FUNDING NUMBERS
6. AUTHOR(S) <i>Donald R. DeGlopper</i>		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <i>Federal Research Division Library of Congress Washington, DC 20540-5220</i>		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) <i>N/A</i>		10. SPONSORING/MONITORING AGENCY REPORT NUMBER
11. SUPPLEMENTARY NOTES <i>Prepared under an Interagency Agreement</i>		
12a. DISTRIBUTION/AVAILABILITY STATEMENT <i>Approved for public release; distribution unlimited.</i>		12b. DISTRIBUTION CODE
13. ABSTRACT (Maximum 200 words) <i>This compilation of significant transfers of technology to China since 1984 concentrates on technology with basic industrial or potential military applications. Consulting services and training in generalized skills, such as management and computer programming, are also included. This study is based on a variety of sources, including United States and foreign newspapers, trade journals, newsletters, and wire services.</i>		
14. SUBJECT TERMS <i>China Technology transfer National security</i>		15. NUMBER OF PAGES <i>246</i>
		16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT <i>UNCLASSIFIED</i>	18. SECURITY CLASSIFICATION OF THIS PAGE <i>UNCLASSIFIED</i>	19. SECURITY CLASSIFICATION OF ABSTRACT <i>UNCLASSIFIED</i>
		20. LIMITATION OF ABSTRACT <i>SAR</i>

Dear Reader:

This product was prepared by the staff of the *Federal Research Division* of the *Library of Congress* under an interagency agreement with the sponsoring United States Government agency.

The Federal Research Division is the Library of Congress's primary fee-for-service research unit. At the request of Executive and Judicial branch agencies of the United States Government and on a cost-recovery basis, the Division prepares studies and reports, chronologies, bibliographies, foreign-language abstracts, and other tailored products in hard-copy and electronic media. The subjects researched include the broad spectrum of social sciences, physical sciences, and the humanities.

For additional information on obtaining the research and analytical services of the Federal Research Division, please call 202/707-9905, fax 202/707-9920, via Internet frd@mail.loc.gov, or write to *Marketing Coordinator, Federal Research Division, Library of Congress, Washington, DC 20540-5220*.

Accession For	✓		
NTIS	CRA&I	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DTIC	TAB	<input type="checkbox"/>	<input type="checkbox"/>
Unannounced			
Justification _____			
By	Distribution /		
Availability Codes			
Dist	Avail	and/or	Special
A-1			



Louis R. Mortimer
Chief
Federal Research Division
Library of Congress
Washington, DC 20540-5220

PREFACE

This selective compilation and analysis of significant transfers of technology to China during the first half of 1986 concentrates on technology with basic industrial or potential military applications. Consulting services are also included. The chronology is based on a variety of sources, including US and foreign newspapers, trade journals, newsletters, and wire services.

The basic unit recorded is the transaction. The record for each transaction includes the item of technology, the foreign and Chinese parties involved, the terms and value of the agreement, and additional information that may indicate its significance. Transactions are grouped in broad categories such as electronics or transportation equipment. Depending on user requirements, further subsets of transactions, such as those involving a particular item, foreign country, or end user, may be produced.



An imported terminal serves the Beijing-Vienna satellite data link
New China Quarterly (Hong Kong), No. 1, July 1986, p. 10

iii
(Reverse Blank)

CONTENTS

	<u>Page</u>
SUMMARY.....	vii
TRENDS ON TECHNOLOGY TRANSFER, JANUARY-JUNE, 1986	1
INTRODUCTION TO CHRONOLOGY.....	5
STATISTICAL SUMMARY.....	7
CHRONOLOGY	8
Chemicals.....	10
Computers.....	13
Electronics.....	17
Energy.....	20
Heavy Industry.....	22
Instruments.....	24
Machinery.....	25
Management.....	26
Metallurgy.....	28
Military.....	29
Miscellaneous.....	30
Nuclear.....	31
Telecommunications.....	33
Transportation.....	33

SUMMARY

China's ambitious plan to quadruple its production by the year 2000 depends on the successful introduction of foreign technology. Military modernization is to be funded by rapid economic growth and to be achieved through domestic production of advanced weaponry rather than by large-scale purchases from abroad. In both the civilian and military sectors, the policy is to import technology that is as advanced as possible while still suitable for Chinese conditions rather than to import finished products. Chinese importers usually attempt to include technology transfer and training in contracts for the purchase of advanced equipment.

The major obstacles to successful realization of this policy are:

- o foreign export controls;
- o the reluctance of foreign corporations to transfer advanced technology to or to risk capital in China;
- o the tendency for many Chinese organizations to seek short-term benefits by importing finished goods such as automobiles or consumer electronic products rather than make the long-term effort to master new technology;
- o long delays and bureaucratic obstruction caused by China's import and foreign-exchange controls, which are intended to counter the demand for finished and consumer goods; and
- o the difficulties Chinese enterprises have in absorbing technology.

The first obstacle has been addressed by persistent and generally successfully diplomatic activity, supplemented by quiet attempts to evade or circumvent export controls. The second obstacle has provided the motive for major efforts to reform China's commercial and legal system in order to provide foreign corporations with the assurances they need to invest in China and to transfer technology. The third obstacle has been met with less than complete success by exhortation, financial incentives to import technology rather than finished goods, and by reimposition of strict controls over imports and foreign exchange, when necessary. The import-control system, the fourth obstacle, has been the target of an ambitious reform of the whole foreign trade system, aimed at devolving authority to approve imports to lower administrative levels. The fifth obstacle is a long-term problem, the solution of which lies in raising the levels of skills of China's technical and managerial workforce and in increased interaction with foreign enterprises that use advanced technology.

During the 7th Five Year Plan (1986-90), as under the 6th Plan (1981-85), the emphasis is on raising the technical level of existing enterprises rather than importing complete new plants. Priority is given to investment in energy, transportation and electronics, as well as to equipment for upgrading existing facilities. Military equipment has a low priority, reflecting both the relatively low ranking of military needs in the "Four Modernizations" and recognition of the huge costs necessary to equip China's armed forces with substantial quantities of foreign materiel. However, much of the recently imported technology, especially in electronics and telecommunications, has fairly immediate military uses, and that in such fields as transportation equipment or metallurgy often has potential military applications.

Most transfer of technology to China takes place within commercial transactions between foreign corporations and Chinese enterprises. These transactions may be purchases, assembly agreements, licensing, coproduction, joint ventures, equipment leasing, and consulting and training agreements, the precise form, scope and content of which depend on the agreement negotiated between the two parties. In terms of effective technology transfer, the duration of the contact and the ease and frequency of consultation are the prime factors, and joint ventures or long-term coproduction agreements are more productive than one-time sales of equipment or licenses. The extent to which Chinese factories or other end-users have been able to deal directly with foreign suppliers of technology has varied, but the general trend is toward increased decisionmaking power at factory or municipal industrial commission levels rather than at the central ministries in Beijing.

TRENDS IN TECHNOLOGY TRANSFER, JANUARY - JUNE 1986

During the first half of 1986, China signed 476 "high technology" import contracts worth \$1.48 billion. Under these agreements, most of the technology in the chemical, energy, electronics, machinery and metallurgical industries is coming from Europe rather than the United States or Japan.¹ The overall value of imports of technology was about the same as in 1985, when the 12-month total was \$2.96 billion. China's efforts to cope with its mounting foreign trade deficit by limiting imports and access to foreign exchange have so far had no adverse effect on imports of advanced technology. Early in June a high official on the State Council staff assured potential foreign investors that foreign currency for key technology and equipment "can be fully guaranteed."²

China's long-term efforts to attract foreign investment and technology by creating a legal framework to protect the interests of foreign investors continued with the 12 April National People's Congress passage of the Law on Wholly Foreign-Owned Enterprises. The law, which guarantees the rights and "legitimate interests" of foreign investors, is explicitly intended to attract foreign capital and technology that would otherwise not be risked in China and makes China the first socialist country to permit foreign-owned firms (rather than joint-ventures) to operate domestically.³ Foreign commentary on the law noted that it makes no extraordinary concessions and is, perhaps purposefully, vague on many key points. Commentators predict no rush of investment and advise careful investigation of the relative advantages of the various forms of investment in China.⁴

At the end of 1985 Western export controls on technology sold to China were significantly eased. On 15 December 1985, the Coordinating Committee for Multilateral Export Controls (CoCom) issued revised guidelines (which took effect 15 February 1986) under which 27 categories of goods no longer require multinational review before being sold to China. In turn, Beijing agreed to provide uniform end-user certificates, issued by the Technology Import and Export Department of the Ministry of Foreign Economic Relations and Trade (MOFERT).⁵ The relaxation of CoCom controls led to numerous sales of electronic manufacturing equipment and computer equipment of a technical sophistication that previously would not have been permitted. China's leaders have continued to call for further relaxation or abolition of foreign technology export controls, indicating the continuing salience of technology transfer as a foreign policy goal.

Letters of Intent for French and British sale of reactors and generators for the nuclear power plant at Daya Bay near Hong Kong were signed in March. But, in a shift of policy, Chinese authorities announced in April that the country would rely largely on its own efforts to develop nuclear power. Plans to import reactors for the proposed Sunan plant (in southern Jiangsu) and another near Dalian were canceled. The decision, with its implications of a scaled-down and delayed nuclear power program, dashed the hopes of foreign suppliers of reactors and nuclear technology and drained the 1985 US-China Agreement on Cooperation

in Nuclear Energy of much of its significance. The choice of self-reliance doubtless reflects foreign exchange constraints (the Westinghouse Corporation of the USA had been hoping for up to \$10 billion in sales), but also demonstrates the existence within the Chinese bureaucracy of a considerable body of opinion favoring indigenous development.⁶

China's policy of using joint ventures with foreign corporations to import and assimilate advanced technology suffered when increasing complaints from foreign investors became public. In April, American Motors Corporation, a partner in the joint venture Beijing Jeep Corporation and one of the first major foreign firms to agree to a joint venture in China, made its problems with foreign exchange known to the press and threatened to halt production of the AMC "Cherokees" it was assembling in Beijing from kits shipped from the United States and paid for in dollars. By June the foreign press was publishing more and more articles about severe dissatisfaction with China's business climate among foreign investors. Complaints focused on foreign exchange problems, contract disputes, and the distinctively Chinese combination of very high costs with very low productivity. Chinese spokesmen recognized the complaints and responded by counseling patience and mutual understanding. In mid-June it was announced that the State Economic Commission had established a special Foreign Cooperation Coordination Center to help joint ventures solve business problems.⁷

Although the foreign exchange shortage and the dissatisfaction of foreign investors posed threats to future technology imports, those imports actually made during the first six months of 1986 generally followed familiar patterns. Interest in leasing equipment grew, both because this required less delay and red tape than direct purchase, and because it permitted Chinese enterprises to, in effect, get credit and purchase the originally leased equipment with funds earned by using it. There also was strong interest in used but fairly recent equipment and Chinese import-export corporations continued their opportunistic purchases of complete plants from financially pressed foreign firms. Several foreign firms provided expertise for enhanced oil recovery from China's onshore oilfields. In place of the production lines for minicomputers that were imported in previous years, the first half of 1986 saw several purchases of software packages, CAD/CAM (computer-assisted design/computer-assisted manufacturing) systems, and contracts for linking existing computers into large-scale networks and systems. The common theme in these and many other purchases was the enhancement, incremental improvement, or technical upgrading of existing Chinese facilities. This type of purchase seems likely to be continued even if foreign exchange shortages discourage other major and expensive projects such as importing nuclear power plants.

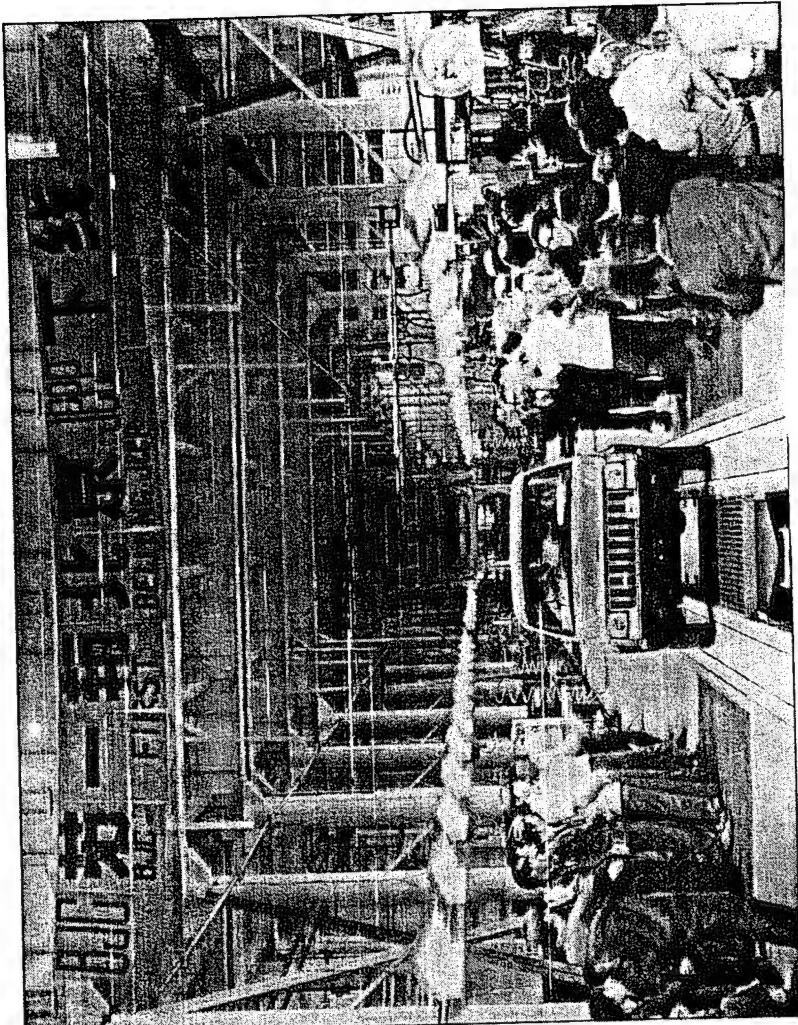


Photo courtesy of American Motors Corp.

The Jeep Cherokee produced at the Beijing Jeep Corporation plant, a joint venture between American Motors Corp. and Beijing Auto Works.

The China Business Review (Washington), January–February 1986, p. 12

NOTES

1 China Daily (Beijing), 6 August 1986, p. 3.

2 China Daily (Beijing), 3 June 1986, p. 1.

3 Yuan Zhenmin, "China Adopts Law on Foreign Enterprises," Beijing Review, 5 May 1986, p. 14.

4 Preston M. Tobert, "Wholly Foreign-Owned Enterprises Come of Age," China Business Review (Washington), July-August 1986, p.50; Richard J. Goosse, "New Foreign Enterprises Law Gives Investors A Choice," East Asian Executive Report (Washington), June 1986, p. 9.

5 "CoCom Eases Rules," China Trade Report, (Hong Kong), June 1986, p. 1.

6 Martin Weil, "Energy Plans Shift Focus," China Business Review (Washington), July-August 1986, pp. 16-19; James P. Sterba, "China Retreats on Foreign Nuclear Pacts," Asian Wall Street Journal (Hong Kong), 28 April 1986, p. 3.

7 John F. Burns, "AMC's Troubles in China," The New York Times, 11 April 1986, p.D1; "New Centre Helps Solve Joint Venture Problems," Ta Kung Pao Weekly Supplement (Hong Kong), 19 June 1986, p. 3.

INTRODUCTION TO CHRONOLOGY

Each transaction listed in the following chronology covering the period 1 January - 30 June 1986 has nine fields: category, date, foreign firm, country, Chinese firm, Chinese end-user, item, comment, and source. These fields permit extensive cross tabulation, such as the creation of particular sets of transactions (for example, all imports of nuclear-power technology for a specific period of time or all electronics technology from France, or all foreign firms selling technology to the Number 2 Machine Tool Factory in Wuhan).

Fourteen technology-transfer categories have been tabulated: chemicals, computers, electronics, energy, heavy industry, instruments, machinery, management, metallurgy, military, miscellaneous, nuclear, telecommunications, and transportation. This is a selective rather than an exhaustive list and is most complete in the categories of computers, electronics, telecommunications, and transportation. Nuclear refers to nuclear power rather than weapons, and the military category is reserved for the transfer of weapons technology or new weapons or materiel to the Chinese Armed Forces. The focus throughout is on the transfer of production technology rather than finished goods and on technology serving basic industrial or military ends rather than consumer goods.

The category of Chinese firms refers to the central ministry or national import and export corporation which functions as a purchasing agent (except in the case of state-to-state agreements). The category for end-user refers to the factory or other unit for which the item is purchased. As the online file grows, it will be possible to select specific Chinese factories and to list all their recent imports of foreign technology or to select a foreign firm and to identify where its products are going.

The chronology lists 87 transactions with 16 foreign countries. The preponderance of the United States (28 transactions), Japan (18 transactions), and the United Kingdom (12 transactions) reflects both the sources from which the list was compiled and the focus on computers and electronics. The following table sets out the categories and foreign countries in a comprehensive fashion.

STATISTICAL SUMMARY

	TOTAL	AUSTRIA	CANADA	FEDERAL REPUBLIC OF GERMANY	FRANCE	HONG KONG	ITALY	JAPAN	NETHERLANDS	NORWAY	SINGAPORE	SOVIET UNION	SWITZERLAND	UNITED KINGDOM	YUGOSLAVIA	TOTAL	STATES OF AMERICA	TOTAL
TOTALS	87	1	3	5	5	1	1	3	18	2	1	2	2	2	12	28	1	87
CHEMICALS	8	--	--	--	--	--	--	1	--	--	--	--	--	--	--	6	--	8
COMPUTERS	9	--	--	--	--	--	--	2	--	--	--	--	--	--	1	6	--	9
ELECTRONICS	13	--	1	--	1	--	1	--	6	1	--	--	--	--	2	1	--	13
ENERGY	11	1	1	--	2	--	--	--	--	--	--	--	--	--	2	4	1	11
HEAVY INDUSTRY	5	--	--	--	--	--	--	3	--	--	--	--	--	--	2	--	--	5
INSTRUMENTS	7	--	--	1	--	--	--	--	--	--	--	--	--	--	1	1	2	--
MACHINERY	2	--	--	1	--	--	--	--	--	--	--	--	--	--	1	--	--	2
MANAGEMENT	2	--	--	1	--	--	--	1	--	--	--	--	--	--	--	--	--	2
METALLURGY	6	--	--	--	1	--	--	2	--	--	--	--	--	1	--	2	--	6
MILITARY	3	--	--	--	--	--	--	--	--	--	--	--	--	--	2	1	--	3
MISCELLANEOUS	2	--	--	--	--	--	--	--	--	1	--	--	--	--	1	--	2	--
NUCLEAR	2	--	--	--	1	--	--	--	--	--	--	--	--	1	--	--	2	--
TELECOMMUNICATIONS	8	--	1	--	--	--	--	1	2	--	--	--	--	--	1	3	--	8
TRANSPORTATION	9	--	--	2	--	1	--	1	2	--	--	--	--	--	1	2	--	9
TOTAL	87	1	3	5	5	1	1	3	18	2	1	2	2	12	28	1	87	

CHINA TECHNOLOGY TRANSFER
CHEMICALS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
01/13/86	Stamicarbon Inc. (Netherlands)	China Petrochemical International Co. (SINOPEC)	---	Computer-based control system and software for urea plant	China Business Review (Washington), May/June 1986, p.68
02/00/86	Ireco Co. (USA)	China National Non-Ferrous Metals Import and Export Corp.	Dexing Copper Mine, Jiangxi	Technology and equipment for dynamite manufacturing plant	Ireco will supply dynamite-mixing trucks, emulsified dynamite technology and designs for the dynamite plant, supply all technical data and train Chinese technicians. Sino-British Trade Review (London), March 1986, p.11
02/01/86	Combustion Engineering (USA)	China Petrochemical International Corp.	Qianjin Chemical Works, Beijing	Modernization of an ethylene plant	Asian Wall Street Journal (Hong Kong), 1 February 1986, p.13
04/14/86	Montedison Corp. (Italy)	China National Chemical Construction Corp.	Urea Plant at Luzhou, Sichuan	License of isobar double-recycling process	This plant modernization is intended to cut energy consumption and increase daily capacity from 500 tons to 750 tons. Business China (Hong Kong), 14 April 1986, p.54
04/29/86	DuPont Corp. (USA)	China National Chemical Construction Corp.	Plants in Qingdao, Shandong; Datong, Shanxi; and Changshou, Sichuan	Three synthetic rubber production lines	The lines for production of neoprene synthetic rubber will be installed by the end of 1987. DuPont will train Chinese technicians. Xinhua (Beijing), 29 April 1986, in FBIS/China, p.B3

CHINA TECHNOLOGY TRANSFER
CHEMICALS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
05/00/86	NCH Co. (USA)	China Huayang Technical Corp.	Dalian No. 2 Organic Chemical Factory	Joint venture to introduce advanced technology to produce industrial chemicals	Sino-British Trade Review (London), June 1986, p.10
06/04/86	Stone and Webster Engineering Corp. (USA)	China Petrochemical International Corp. (SINOPEC)	Three oil refineries, in Nanjing, in Guangzhou, and Changling, Hunan	Fluid catalytic cracking technology	The three refineries are to be upgraded with a new fluid catalytic cracking technology called the S&W FCC which converts low-quality refining residue into gasoline, diesel fuel and other marketable products. China Daily, Business Weekly (Beijing), 4 June 1986, p.4
06/12/86	Dow Chemical Corp. (USA)	Yanshan Petrochemical Plant, Beijing	Licensing of technology for polystyrene plant	Dow will provide technology and help in the design, engineering and selection of equipment for the plant. The plant, which is to have an annual capacity of 50,000 metric tons, is to start production in 1989. Ta Kung Pao Weekly Supplement (Hong Kong), 26 June 1986, p.5	

CHINA TECHNOLOGY TRANSFER
COMPUTERS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
01/16/86	China Business Associates (USA)	Ministry of Communications	- - -	Computer network system	<p>The Ministry of Communications will receive a Nestar Plan 5000 network system, produced in Palo Alto. It links personal computers, even at great distances. One system will be used to automate shipping, inventory and accounting at 19 ports in China. Another will be set up at the Ministry of Communications Computer Center in Beijing. China Daily (Beijing), 27 January 1986, p.2</p>
02/13/86	Hitachi Ltd. (Japan)	Peoples Bank of China	- - -	Large-scale computer systems	<p>Following a December 1985 decision of COCOM to ease controls on sales of large computers, Hitachi agreed to supply the Peoples Bank of China with 15 large-scale computers which will be used to form an on-line network linking the bank's headquarters in Beijing with its local branches.</p> <p>Kyodo (Tokyo), 13 February 1986, in BBC, SWB, Weekly Economic Report (Reading, UK), 26 February 1986, p.A29.</p>
03/00/86	Sanko Development Co. (Japan)	Dalian Beiyang Industrial Stock Corp.	- - -	Joint venture in software development	<p>The Dalian Beixing Computer Co. will develop computer software and provide consulting services in computer technology.</p> <p>China Business Review (Washington), May/June 1986, p.73</p>

CHINA TECHNOLOGY TRANSFER
COMPUTERS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
04/00/86	Gerber Systems Technology (USA)	- - -	Shanghai Metallurgical and Mining Machinery Factory	CAD/CAM (Computer-assisted design/manufacture) software and hardware, including Chinese-language software	China Business Review (Washington), July/August 1986, p.59
05/00/86	Prime Computer Corp. (USA)	- - -	Central Coal Mining Research Institute, Shanghai	Prime computers and applications software	The Institute will use the Prime ECL superminicomputer with Prime Medusa and ANSYS applications software to improve geological data research, construction design and production management for the coal industry. Business China (Hong Kong), 12 May 1986, p.70
05/00/86	Deltacam Systems Ltd. (United Kingdom)	- - -	Institute of Automation, Chinese Academy of Sciences, Beijing	CADCAM package	Deltacam supplies its "DUCT 3D" design and manufacturing system as part of a hardware and software package for CADCAM (computer-assisted design and manufacture) training and application in industry. Sino-British Trade Review (London), July 1986, p.8
05/23/86	Burroughs Corp. (USA)	Yunnan Import and Export Corp.; Everbright Industrial Corp.	Unspecified factory in Kunming	Manufacture of B-25 microcomputer	In a \$25 million deal, the B-25, Burroughs' top of the line model, is to be manufactured for use in China's banking and industry. It has been modified to employ

CHINA TECHNOLOGY TRANSFER
COMPUTERS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	ITEM	COMMENTS/SOURCE
			Chinese characters. China Business and Trade (Washington), 23 May 1986, p.1	
06/00/86	Prime Computer (USA)	Ministry of the Metallurgical Industry Baoshan Iron and Steel Plant, Shanghai	Super minicomputer and software package	The \$500,000 sale was made by Prime's Hong Kong subsidiary. The Prime 9750 high-performance super minicomputer will operate with the Chinese-language Primos system. It will be used to organize the second stage of the Baoshan project. Business China (Hong Kong), 30 June 1986, p.95
06/00/86	Oracle Corp. (USA)	Ministry of Communications; Ministry of Machine-Building	Database software	Oracle's database software permits Chinese users to make more efficient use of the computers they have already purchased. The Ministry of Communications is using it on a network of linked personal computers (imported), Great Wall computers (domestic), and an associated mainframe. A similar network is being set up for the Ministry of Machine-Building. China Daily, Business Weekly (Beijing), 25 June 1986, p.4

CHINA TECHNOLOGY TRANSFER
ELECTRONICS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
01/00/86	Sofrecom (France)	China National Electronics Research Center, Wuxi, Jiangsu	Electronics Research Center, Wuxi, Jiangsu	Equipment and training for research on integrated circuits	Sofrecom, a French company under the Ministry of Posts and Telecommunications, signs a \$65-million contract to provide foreign material for a research center for integrated circuits. Chinese technicians will be trained at the Centre Nationale d'Etudes des Telecommunications, a French government body. Business China (Hong Kong), 27 January 1986, p.14
01/16/86	Kexi Co. (Japan)	--	Tianjin Economic and Technological Development Zone General Co.	Joint venture to produce computer equipment	The joint venture, the Tianjin-Kexi Company, is to develop and produce computer peripheral equipment, computer accessory products, and plasma cutting and welding devices. China Business Review (Washington), May/June 1986, p.73
02/00/86	Jiada Semiconductor Co. (Hong Kong)	Ministry of the Electronics Industry	Leshan Radio Factory, Sichuan	Two diode production lines	China Business Review (Washington), May/June 1986, p.69
02/09/86	Chronar Corp. (USA)	--	Harbin Electronic Instruments Co.; Harbin Steam Turbine Corp.	Equipment and technology for photovoltaic panels	Chronar will supply automated laser cutters and process-control units, while training personnel and managing the plant. A joint venture is to be formed, in which Chronar will have a 28-percent share. Annual production, using

CHINA TECHNOLOGY TRANSFER
ELECTRONICS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
03/00/86	Furukawa Electric Corp. (Japan)	--	Shenyang Cable Factory, Liaoning	Technology for flame-resistant cables	Chronar's amorphous silicon technology is to reach 250,000 to 300,000 panels. China Business and Trade (Washington), 9 February 1986, p.1
03/03/86	Yokogawa Hokushin Electric Co. (Japan)	--	Xi'an Industrial Instruments Factory	Joint venture for production management systems	The \$3.5-million joint venture will produce and install electronic plant management systems. China Business Review (Washington), May/June 1986, p.73
04/00/86	Fuji Electric Corp. (Japan)	--	Rugao Radio Factory, Nantong, Jiangsu	Equipment for production of high-voltage silicon diodes	The equipment and technology, valued at \$6.25 million, will be used to produce 10 million silicon diodes a year for color televisions. The high-purity, 60-millimeter silicon wafers were restricted before COCOM rules on sales to China were eased in February 1986. Business China (Hong Kong), 12 May 1986, p.70
04/00/86	Plasma Technology (United Kingdom)	--	North China Research Institute, Beijing; Fudan University, Shanghai	Microchip production equipment	Between February and April 1986, Plasma technology sold 19 machines, used to etch and deposit thin layers of chemicals on silicon

CHINA TECHNOLOGY TRANSFER
ELECTRONICS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	ITEM	COMMENTS/SOURCE
04/03/86	Canon Inc. (Japan)	— — —	Beijing No. 3 Semiconductor Devices Factory	Two mask aligners This is the first sale of such devices to China since the February 1986 relaxation of COCOM controls on exports to China. The mask aligners, which are used in printing circuits on silicon wafers, will be used to manufacture CMOS (complementary metal oxide semiconductor) gate-type arrays for large-scale integrated circuits (LSI). Japan Economic Journal (Tokyo), 12 April 1986
05/00/86	Kanematsu-Gosho (Japan)	— — —	No. 6 Semiconductor Factory, Beijing	Semiconductor production equipment The equipment, which includes production facilities from Japanese companies and test systems from the LTX Corp. of the US, will be used to manufacture bipolar linear integrated circuits for television sets. Business China (Hong Kong), 12 May 1986, p.70
05/00/86	Racial Avionics Co. (United Kingdom)	Civil Aviation Administration of China (CAAC)	— — —	Navigation beacons and production technology for navigation aids Sino-British Trade Review (London), June 1985, p.3

CHINA TECHNOLOGY TRANSFER
ELECTRONICS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	ITEM	COMMENTS/SOURCE
05/06/86	Gandalf Technologies Inc. (Canada)	Nanjing Radio Factory	Agreement to manufacture modems, multiplexers and interface converters	China Business Review (Washington), July/August 1986, p.60
06/00/86	Radio Holland (Netherlands)	Dalian Shipyard	Communication and navigation equipment	The equipment, which includes radar and sonar devices, is for military tankers being built in Dalian for Pakistan. Because Pakistan is the end-user, Radio Holland expects no difficulty in obtaining the required COCOM approval. Business China (Hong Kong), 9 June 1986, p.87

CHINA TECHNOLOGY TRANSFER
ENERGY

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
01/00/86	Smelt Co. (Yugoslavia)	China Petrochemical International Co. (SINOPEC)	Unspecified refinery, Guangdong	Equipment for refinery to produce unleaded gasoline	In a \$21 million contract, Smelt, a Yugoslavian engineering company, will provide equipment, technology, and supervision of construction. The equipment will come from a closed-down refinery in Yugoslavia and will permit the new refinery to produce unleaded gasoline which meets US standards. This is the largest Sino-Yugoslav industrial project. Petroleum Intelligence Weekly (New York), 6 January 1986, p.10; China Daily (Beijing), 2 April 1986, p.2.
01/17/86	Jardine Engineering Corp. (United Kingdom)	---	Shenyang Pump Manufacturing Co.	Technology to manufacture injection pumps for oilfields	China Business Review (Washington), July/August 1986, p.61
02/00/86	Mather and Platt (United Kingdom)	China National Machinery and Equipment Import and Export Corp.	Shenyang Pump Factory, Liaoning	Technology for manufacturing special pumps	The pumps, used in oil production, employ a patented corrosion-resistant steel. China Business and Trade (Washington), 9 February 1986, p.2.
03/00/86	Alsthom Corp. (France)	Huaneng Corp.	New Power Plant, Shantou, Guangdong	Technology for dual-burn combined steam and gas turbine power plant	The 100-megawatt power plant will burn Chinese crude oil. The dual-burn system produces yields of 50 percent from crude, compared with the standard system's yield of 30 percent.

CHINA TECHNOLOGY TRANSFER
ENERGY

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
03/00/86	Zeltweg (Austria)	- - -	Huainan Coal Mining Machinery Plant, Anhui	Cooperation in production of coal mine tunnelers	Business China (Hong Kong), 31 March 1986, p.46
03/00/86	Lummus Crest Inc., Kaiser Engineers and Contractors Inc. (USA)	Ministry of the Coal Industry	Proposed coal gasification plant, Yuxian, Hebei	Technical and economic feasibility study	The proposed plant is to convert sub-bituminous coal, from mines yet to be developed, to gas which will be piped 240 kilometers to Beijing. The study is funded by the US Government's Trade and Development Program. Petroleum Times (Kent, ME), March 1986, p.25
03/00/86	Total Corp. (France)	China Oil and Natural Gas Exploration and Development Corp.	Unspecified onshore oil field	Enhanced oil recovery technology	The industrial cooperation agreement provides for transfer of technology for enhanced recovery by gas injection. Petroleum Times (Kent, ME), March 1986, p.4
04/13/86	Lummus-Crest Inc. (USA)	China Petrochemical International Corp.	Hua-Lu Engineering Co. Ltd.	Joint venture offering engineering services	The joint venture will offer project feasibility studies, engineering design, and a range of technical services to the petroleum refining, petrochemical, and power industries. Ta Kung Pao Weekly (Hong Kong), 24 April 1986, p.4

CHINA TECHNOLOGY TRANSFER
ENERGY

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
04/15/86	Fluor Engineering Inc. (USA)	China Petrochemical International Corp. (SINOPEC)	Sino-Fluor Engineering Co. Ltd.	Joint venture for engineering work	The new company signed a contract for a tank yard at the Daqing oilfield. It will also construct production facilities, pipelines, terminals, hydrocarbon processing and other facilities for petrochemical industries on a worldwide basis. <i>Ta Kung Pao Weekly Supplement</i> (Hong Kong), 24 April 1986, p.4
05/05/86	Consolidation Coal Co.; Kaiser Engineering and Construction Corp. (USA)	Ministry of the Coal Industry	New Mine at Huangling, Shaanxi	Feasibility study for US mining techniques	The contract calls for analysis of the feasibility and economics of the use of US continuous mining equipment rather than European longwall mining equipment. China is interested in the US equipment because China's geological conditions resemble those of the US more than those of Europe. <i>China Daily</i> (Beijing), 5 May 1986, p.2
06/24/86	Wearmouth Canada Inc. (Canada)	China Fu Lui Corp.	Oil refinery, Yunan, Shaanxi	Second-hand oil refinery	The 10,000 barrel-a-day refinery at Kamloops, British Columbia, was shut down in 1984 by Gulf Canada Ltd. The \$20 million price includes dismantling, shipping and reconstruction in Shaanxi. <i>Oil and Gas Journal</i> (Tulsa OK), 30 June 1986, p.43

CHINA TECHNOLOGY TRANSFER
HEAVY INDUSTRY

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
04/00/86	Showa Shell Sekiyu (Japan)	China International Petrochemical Corp. (SINOPEC)	---	Lubricant plant	The new plant, in Lanzhou, is to open by mid-1987 and have an annual capacity of 7,000 tons. Business China (Hong Kong), 28 April 1986, p.64
04/00/86	Fuji Electronic Industries (Japan)	Oriental Scientific Instruments Import and Export Corp.	---	Pyrogenic sintering furnace for high-performance ceramics and a vacuum hot press	Jetro China Newsletter (Tokyo), May/June 1986, p.22
04/00/86	Taiyo Tekko (Japan)	China National Machinery Import and Export Corp.	Zhaogqing Pneumatic Fittings Factory, Guangdong	Technology for high-pressure air cylinders	Jetro China Newsletter (Tokyo), May/June 1986, p.22
04/08/86	Unspecified Coal Complex, Kharkov (Soviet Union)	Ministry of the Coal Industry	Coal-Dressing Plant, Zanyang, Shanxi	Design for coke plant	Soviet experts have provided the design for a plant to produce coke concentrate for smelting. It will employ a new type of Soviet technology which requires less electricity than other foreign technologies. Tass (Kharkov), 8 April 1986, in FBIS/USSR, 15 April 1986, p.B2
04/19/86	Various Industrial Ministries (Soviet Union)	Sino-Soviet Commission for Economic, Trade and Scientific and Technical Cooperation	Various steelworks, factories and mines	Technical renovation	Among the 17 renovation projects for Chinese heavy industrial enterprises originally built with Soviet assistance are those for the steel complexes at Anshan, Baotou and Wuhan, the Luoyang tractor and bearing plants, a

CHINA TECHNOLOGY TRANSFER
HEAVY INDUSTRY

DATE FOREIGN FIRM/COUNTRY CHINESE FIRM CHINESE END USER ITEM

COMMENTS/SOURCE

high-voltage switch factory in Xi'an, and three new thermal power stations and an open-pit coal mine. Cooperation will include design work, the supply and installation of equipment, and training for Chinese technicians at Chita in the Soviet Union.
Izvestiya (Moscow), 19 April 1986, in FBIS/USSR, 23 April 1986, pp.B1-5

CHINA TECHNOLOGY TRANSFER
INSTRUMENTS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	ITEM	COMMENTS/SOURCE
01/07/86	Honeywell Corp. (USA)	Sichuan Instrument Complex, Chongqing	License for digital process-control system	Honeywell and its Japanese affiliate Yamatake-Honeywell have licensed production of its TDC-3000 digital process-control system. The controllers will be used in such industries as oil refining, petrochemical processing, papermaking, and power generation. Hardware accounts for 30 percent of the project and software and training make up the rest. China Daily (Beijing), 7 January 1986, p.2
01/09/86	Far East Computers (Singapore)	Institute of Automation, Chinese Academy of Sciences	Institute of Software Research	Computer-assisted design (CAD) and manufacturing system worth \$380,000
03/00/86	Siemens AG (Federal Republic of Germany)	Ministry of Posts and Telecommunications	Meishan Telecommunications Equipment Plant, Sichuan	Joint production of instruments
04/21/86	Eaton Corp. (USA)	China North Industries Corp.	Shanghai Electric Apparatus Research	Electromagnetic interference data

The contracts are worth \$2 million. China North

Japanse affiliate Yamatake-Honeywell have licensed production of its TDC-3000 digital process-control system. The controllers will be used in such industries as oil refining, petrochemical processing, papermaking, and power generation. Hardware accounts for 30 percent of the project and software and training make up the rest.
China Daily (Beijing), 7 January 1986, p.2

Far East Computers is a subsidiary of Hindustan Computers of India. China Business Review (Washington), March/April 1986, p.54

In a \$4-million contract, Siemens is to export technology and jointly produce analog and digital telecommunication meters and instruments, including microprocessor-controlled programmable meters, digital analyzers, and digital circuit analyzers.

China Business Review (Washington), May/June 1986, p.72

CHINA TECHNOLOGY TRANSFER
INSTRUMENTS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
		(NORINCO)	Institute; Xi'an Industrial Institute	collection system and computer-aided electromagnetic susceptibility test system	Industries Corp. is a trading organ of the Ministry of the Ordnance Industry. China Business Review (Washington), July/August 1986, p.63
05/00/86	Sira Ltd. (United Kingdom)	---	Institute of Remote Sensing, Beijing	Infrared measuring equipment	The equipment, for use in resource-monitoring geostationary satellites, includes infrared optical measuring equipment and a computer-controlled universal test system. Sino-British Trade Review (London), July 1986, p.8
05/05/86	Coropian Co. (Switzerland)	---	Harbin Measuring and Cutting Tools Plant	Joint production of electronic digital display measuring tools	China Business Review (Washington), July/August 1986, p.61
06/00/86	Far East Computers (Singapore)	---	Microelectronics Center, Nanjing Institute of Technology	Computer-assisted design and manufacturing (CAD/CAM) system	Far East Computers is a subsidiary of India's Hindustan Computers. China Trade Report (Hong Kong), June 1986, p. 3

CHINA TECHNOLOGY TRANSFER
MACHINERY

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
01/00/86	CTM Co. (United Kingdom)	---	Dalian Machine Tool Factory; Dalian Combined Machine Tool Research Institute	Agreement for a flexible manufacturing system	China Business Review (Washington), March/April 1986, p.54
02/00/86	Motoren Werke Mannheim AG (Federal Republic of Germany)	China Shipbuilding Trading Co.	---	License for production of diesel engines	The engines can be used for marine propulsion as well as for agricultural and construction equipment and for generators. China Business Review (Washington), May/June 1986, p.70

CHINA TECHNOLOGY TRANSFER
MANAGEMENT

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
02/27/86	Government, Federal Republic of Germany (Federal Republic of Germany)	Government, China	New technical training center, Tianjin	Establishment of joint high-technology training center	The center will train technical specialists for joint industrial projects. Several large firms in the FRG will help to develop practical training programs and expect to hire graduates for their joint projects in China. The center is to open in the summer of 1987. DPA (Deutsche Press Agentur), 27 February 1986, in BBC, Summary of World Broadcasts, Weekly Economic Report: The Far East, 19 March 1986, p.A/19
03/20/86	Government, Japan	Government, China (Japan)	New Management Training Center, Tianjin	Sino-Japanese cooperative management training center opens in Tianjin	Japan is providing textbooks and training for the Chinese teachers at the center, which will offer 4-month and 2-week training courses for enterprise managers and chief engineers. China Daily (Beijing), 20 March 1986, p.3

CHINA TECHNOLOGY TRANSFER
METALLURGY

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
02/00/86	Miller Electric Manufacturing Corp. (USA)	China National Machinery and Equipment Import and Export Corp.	Shanghai Electric Welding Machine Works	Technology to manufacture arc welding equipment and power supplies	The agreement requires US Government approval. China Business Review (Washington), May/June 1986, p.69
02/00/86	Concast Standard AG. (Switzerland)	China National Technical Import and Export Corp.	Shoudu Iron and Steel Corp., Beijing	Two continuous casting machines	China Business Review (Washington), July/August 1986, p.61
03/00/86	Pechiney (France)	---	Hejin Alumina Plant, Shanxi	Technical assistance for bauxite refining unit	Sino-British Trade Review (London), April 1986, p.15
03/03/86	Numerex Corp. (USA)	---	Beijing Electric Furnace Works	Heat-treatment process	The heat-treatment process (ionnitriding) is used in the production of aircraft parts or of carbon, stainless steel, titanium and titanium alloy cutting tools. China Business Review (Washington), May/June 1986, p.72
04/00/86	Mitsui Mining and Smelting, Toho Zinc Corp. (Japan)	China Nonferrous Metals Import and Export Corp.	New zinc refinery, Lanzhou	Facilities and technology for integrated zinc refining	Jetro China Newsletter (Tokyo), May/June 1986, p.22
05/00/86	Kobe Steel Corp. (Japan)	China National Technical Import Corp.	Anshan Steel Complex, Liaoning	Continuous steel-slab caster	Scheduled to start up in 1990, the caster will have an annual output of 2 million metric tons of steel slabs, and incorporate an electromagnetic stirring system used in the production of high-grade and specialty steels. The

CHINA TECHNOLOGY TRANSFER
METALLURGY

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
					contract is worth \$94 million. Business China (Hong Kong), 12 May 1986, p.70

CHINA TECHNOLOGY TRANSFER
MILITARY

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
01/00/86	GEC Avionics (United Kingdom)	China National Aero-Technology Import and Export Corporation	- - -	Avionics for F-7 fighter plane	The equipment, identical to that supplied under a June 1980 contract, includes a lightweight ranging radar, headup display and weapon-aiming computer and radios. The plane, the F-7M, is an improved export version of China's F-7. <i>Flight International</i> (London), 1 February 1986, p.38.
05/01/86	Government, United States (USA)	PLA Air Force	- - -	Avionics for F-8 fighters	On 1 May 1986 the US Senate approved the sale of \$550-million worth of aviation electronics equipment to China. The radar, navigation, and fire control devices are to be supplied as 55 kits to equip 50 fighters. The US Air Force is to determine which equipment best suits the F-8 and will select a US contractor to supply the kits. The program is expected to take about six years to complete. <i>New York Times</i> , 9 April 1986, p.A3; <i>Ta Kung Pao</i> <i>Weekly Supplement</i> (Hong Kong), 8 May 1985, p.5
05/14/86	Vickers Defence Systems (United Kingdom)	Yong Ding Machine Factory	- - -	Joint venture to produce armored fighting vehicles	The two parties have exchanged personnel for training, and a Vickers' spokesman claims that the venture's products will be cheaper than any similar vehicle. <i>China Daily</i> (Beijing), <i>Business Week</i> , 14 May 1986, p.4

CHINA TECHNOLOGY TRANSFER
MISCELLANEOUS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
01/17/86	Gerber Scientific Instrument Corp. (USA)	- - -	Number 2 Automotive Works, Shiyan, Hubei	Precision drafting and video digitizing system	China Business Review (Washington), July/August 1986, p.63
06/00/86	Norcontrol Surveillance Systems (Norway)	- - -	Port of Qingdao, Shandong	Vessel traffic system	The VOC 86 system, to be installed in early 1987, includes interfaces to connect with Chinese radar, display consoles, advanced tracking systems, and recording equipment for storing vessel movements. Business China (Hong Kong), 30 June 1986, p.95

CHINA TECHNOLOGY TRANSFER

NUCLEAR

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
03/12/86	Framatome & Cie. (France)	Guangdong Nuclear Power Joint Venture	Daya Bay Nuclear Power Plant	Letter of Intent for two 1,000 megawatt nuclear reactors	Framatome is part of a \$4.1-billion bid with Electricité de France, which is to supervise, design and construction of the plant, and with General Electric Co. of Britain, which will supply turbine generators. China is expected to sign final contracts with the three firms during the summer of 1986. <i>Asian Wall Street Journal (Hong Kong)</i> , 13 March 1986, p.6
03/19/86	General Electric Co. (United Kingdom)	Guangdong Nuclear Power Joint Venture Co.	Daya Bay Nuclear Power Plant	Two 900,000 kilowatt power generators	A letter of intent for the turbines and generators is signed in Shenzhen, completing the arrangements that began the previous week with the signing of the letters of intent for the reactors and plant design which will be provided by Framatome and Electricité de France. <i>China Daily (Beijing)</i> , 21 March 1986, p.1

CHINA TECHNOLOGY TRANSFER
TELECOMMUNICATIONS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
03/00/86	Pye Telecom (United Kingdom)	- - -	Peoples Armed Police, Guangzhou	Portable radio-telephone system	The contract, worth \$750,000, calls for the supply of Pye's PFX hand-portable "pocketphones," which use advanced technology new to China. Sino-British Trade Review (London), March 1986, p.6
03/08/86	Nittsuko Ltd. (Japan)	China National Electronic Technology Import and Export Corp.	- - -	Joint venture to produce telephones and small private-branch exchanges (PBX)	China Business Review (Washington), May/June 1986, p.74
03/24/86	Motorola Inc. (USA)	Beijing Telecommunications Administration	- - -	Cellular radiotelephone system	In a \$3.7-million contract, Motorola will provide China's first cellular radiotelephone system. This total access communications system (TACS) operates at 900 megahertz and was selected for its portability. Telephony (Chicago), 24 March 1986, p.30
04/00/86	Mitel Corp. (Canada)	Nanhai Oil Electronic Corp.; PT and T Industrial Corp.	- - -	Joint venture to produce small PABX (private telephone exchange) systems	The plant will be at Nantou in the Shenzhen Special Economic Zone. In about three years annual capacity of the new plant is to be about 300,000 lines. Mitel has about 10 percent of the world market for PABX systems. Business China (Hong Kong), 28 April 1986, p.64

CHINA TECHNOLOGY TRANSFER
TELECOMMUNICATIONS

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
04/12/86	Furukawa Electric Co. (Japan)	Xi'an Electric Manufacturing Corp.	Xi'an Cable Works	Joint venture to produce optical fibers	The joint venture, Shianfu Optical Fiber and Cables Co., will be established in Xi'an and have an annual production capacity of 20,000 kilometers of optical fiber. Japan Times (Tokyo), 12 April 1986
04/21/86	Pacific Telesis International; Kaiser Engineers Inc. (USA)	Ministry of Posts and Telecommunications	Carrier Equipment Plant, Meishan, Sichuan	Feasibility study for plant modernization	The plant at Meishan can produce only 60-channel bank modems, but updated equipment will permit production of 1,200-channel modems. The feasibility study is funded by the US International Development Cooperation Agency. Ta Kung Pao Weekly Supplement (Hong Kong), 21 April 1986, p.4
05/25/86	Telettra-Pirelli Co. (Italy)	— — —	Fujian Province	Optical fiber communications system	The Italian company will provide all the equipment for the system, which will link Xiamen with Zhangzhou, Longyan, and Nanping along the right-of-way of the electrified Yingtan-Xiamen railroad. Xinhua, 25 May 1986, in FBIS/China, 28 May 1986, p.01
06/00/86	Microwave Associates International (USA)	Polytechnologies Inc.	—	Microwave connector components	Polytechnologies is a purchasing arm of China's defense industry. China Business Review (Washington), July/August 1986, p.64

CHINA TECHNOLOGY TRANSFER
TRANSPORTATION

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
02/01/86	Suzuki Motor Co. (Japan)	- - -	Yuxing Industries Corp., Sichuan	Technical assistance for truck production	Suzuki will provide Chongqing's Yuxing Industries Corp. with major parts, including engines and transmissions, for production of 5,000 trucks and vans a year. This is Suzuki's third cooperative venture in truck production in China. The others are in Jilin and Beijing. Asian Wall Street Journal (Hong Kong), 1 February 1986, p.13
03/05/86	American Coal Enterprise (USA)	Ministry of Railways	Datong Locomotive Works, Shanxi	Production of advanced technology steam locomotives	The goal is to use American Coal Enterprise's advanced coal combustion technology to produce highly efficient coal-fired locomotives, which will reduce pollution by up to 90 percent. The new engines, to be called the ACE 3000, will permit the Datong Locomotive Works to earn foreign exchange, as China will be the world's only producer of high-technology, environmentally clean, coal-burning locomotives. China Daily, Business Weekly (Beijing), 5 March 1986, p.4
03/07/86	Schienenfahrzeuge Export Import VE. (German Democratic Republic)	China National Machinery Import and Export Corporation	- - -	Technology for train manufacture	The two state corporations sign five contracts, one of which is for technology transfer over a ten-year

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	CHINA TECHNOLOGY TRANSFER TRANSPORTATION		ITEM	COMMENTS/SOURCE	
							period, and one is for China's purchase of 1000 refrigerator railroad cars and two diesel power generation cars. China Daily (Beijing), 7 March 1986, p.1.	
03/24/86	Daihatsu Motor Corp. (Japan)	Tianjin Motor Vehicle Industrial Corp.	- - -	Nanjing Automobile Plant; Plants in Nanchang, Hangzhou, Ningbo and Xuzhou	Technology for light motor vehicles	Equipment and designs to produce automobiles to produce automobiles	Tianjin is to produce the fuel-efficient Daihatsu Charade, with annual volume reaching 10,000 cars. China Daily (Beijing), 24 March 1986, p.2	
04/14/86	Fiat Corp. (Italy)	Nanjing Joint Automobile Industrial Corp.			The project, with a total investment of \$310 million, is one of the largest to be approved during the 7th Five-Year Plan (1986-1990). Fiat will introduce its S-Series light vehicle design and manufacturing technology. When the project is completed in 1990, the Nanjing plant will produce 100,000 vehicles per year, with the engine and body produced at the Nanjing plant, and such items as the transmission, axles and non-ferrous castings produced at plants in other cities. Business China (Hong Kong), 14 April 1986, p.54			
05/00/86	British Rail Engineering (United Kingdom)	China National Technical Import Corp.	Changchun Passenger Car Factory	Prototype rail passenger cars	The project calls for the design of a new generation of technically			

CHINA TECHNOLOGY TRANSFER
TRANSPORTATION

DATE	FOREIGN FIRM/COUNTRY	CHINESE FIRM	CHINESE END USER	ITEM	COMMENTS/SOURCE
05/17/86	Pratt and Whitney Division, United Technologies Corp. (USA)	China National Aero-Technology Import and Export Corp.	Engine plant in Zhuzhou, Hunan	Assembly in China of PT-6 aircraft engines	advanced rail passenger cars as well as technical assistance in the reorganization of the production facilities of the Changchun factory. Sino-British Trade Review (London), June 1986, p.3
06/03/86	Daimler-Benz Corp. (Federal Republic of Germany)	China North Industries Corp. (NORINCO)	- - -	Technology for production of heavy-duty trucks	China North Industries Corp. is an import/export organ of China's Ministry of the Ordnance Industry, which produces conventional weapons. Xinhua, 3 July 1986, in BBC, SWB Economic Weekly (Reading, UK), 16 July 1986, p.A/10

CHINA TECHNOLOGY TRANSFER			
FOREIGN FIRM/COUNTRY		CHINESE FIRM	
DATE	CHINESE END USER	ITEM	COMMENTS/SOURCE
06/06/86	Messerschmidt-Boel kow-Blohm (MMB) (Federal Republic of Germany)	China Aero-Technology Import and Export Corp. (CATIC)	<p>Cooperation in development of a regional passenger plane</p> <p>The firms have begun feasibility studies, and the proposed plane, the MPC-75, an 85-120-seat passenger plane with a range of 2,800 kilometers, could fly by 1995.</p> <p>China Daily (Beijing), 9 June 1986, p.2</p>